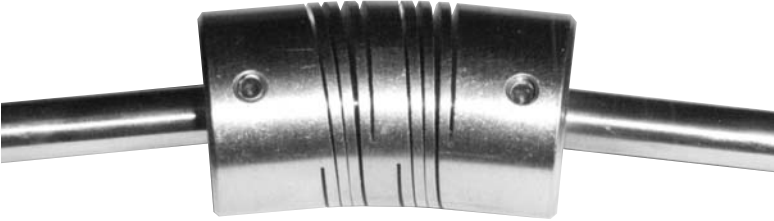
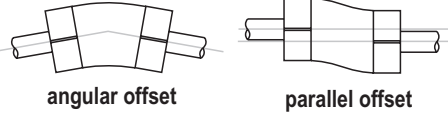


## FLEXIBLE SHAFT COUPLINGS

**Zero Backlash**  
**One Piece Construction**  
**High Flexibility**  
**No Wearing Parts**  
**Constant velocity**  
**No Lubrication Required**


**Available in:**  
 Aluminium alloy  
 Carbon steel  
 Stainless steel

**Ideal for:**  
 stepper motors  
 servomotors  
 encoders  
 ballscrews  
 linear drives  
 gearboxes  
 resolvers  
 tachogenerators

When fitting stepper motors, servomotors, gearboxes and encoders to machines, care must be taken to ensure all devices are coaxial, i.e. no angular or parallel misalignment. Failure to do so will place excessive loads on bearings and reduce life of the components. Using flexible couplings with some angular and parallel compliance will ensure this while maintaining constant velocity and low backlash.


The couplings are manufactured by cutting several helical slots into a solid cylindrical section. Because they are machined from a single section, they are constant velocity couplings and do not cause backlash in position control systems.

Two types are available. The 6 beam couplings consist of 2 sets of 3 helical slots providing good parallel offset. The 3 beam couplings consist of one set of 3 helical slots and are shorter so they can be installed in confined spaces.

For applications where shafts are close together, couplings can be bored with "relief under the beams". This involves hollowing out the area under the beams and enables couplings to be fitted in a smaller space.

### FIXING

Both setscrew and clamp shaft fixings are available. Setscrew couplings are lower cost but can cause damage to a shaft where the screw locks onto the shaft. The clamp style are more expensive but have better gripping in high torque applications.



**Setscrew Fixing**      **Clamp Fixing**

### ORDERING INFORMATION

**N A S 4 - C 6 / 8**

- BORE 1
- BORE 2
- OPTIONAL RELIEF
- SIZE  
2 to 7
- FIXING  
S: Setscrew  
C: Clamp
- MATERIAL  
A: Aluminium  
H: Stainless Steel  
C: Carbon Steel
- No BEAMS  
N: 6 Beams  
R: 3 Beams

ALUMINIUM ALLOY 6 beam	MODEL No.	MODEL No.	D	L	B	MIN R1	MIN R2	MAX BORE	SCREW SIZE	SCREW SIZE	MASS	ANGULAR OFFSET	PARALLEL OFFSET	PEAK TORQUE	TORSIONAL STIFFNESS
	(setscrew)	(clamp)	mm	mm	mm	mm	mm	mm	(setscrew)	(clamp)	grams	± degrees	± mm	Nm	Nm/rad
	NAS2	NAC2	9.5	19.6	5.3	1.9	2.8	4.75	M2.5	M1.6	3	3	0.12	1.0	2
NAS3	NAC3	12.7	22.9	6.5	2.8	4.4	6.35	M3	M2	7	5	0.17	2.0	14	
NAS3.5	NAC3.5	15.9	25.4	6.5	2.8	4.8	8.0	M4	M2.5	9	5	0.20	3.4	33	
NAS4	NAC4	19.1	26.5	6.5	4.4	5.8	10.0	M4	M2.5	18	7	0.25	5.3	57	
NAS5	NAC5	25.4	38.1	11.0	5.8	7.5	12.7	M5	M3	45	7	0.37	10.0	80	
NAS6	NAC6	31.8	57.2	16.0	5.8	9.8	19.0(NAS6) 16.0(NCS6)	M6	M4	105	7	0.50	15.0	195	
NAS7	NAC7	38.1	66.7	18.0	7.8	11.8	22.0(NAS7) 19.0(NCS7)	M6	M5	170	7	0.60	22.0	262	

ALUMINIUM ALLOY 3 beam	MODEL No.	MODEL No.	D	L	B	MIN R1	MIN R2	MAX BORE	SCREW SIZE	SCREW SIZE	MASS	ANGULAR OFFSET	PARALLEL OFFSET	PEAK TORQUE	TORSIONAL STIFFNESS
	(setscrew)	(clamp)	mm	mm	mm	mm	mm	mm	(setscrew)	(clamp)	grams	± degrees	± mm	Nm	Nm/rad
	RAS2	RAC2	9.5	14.2	4.5	1.9	2.8	4.0	M2.5	M1.6	2	3	0.10	0.4	2
RAS3	RAC3	12.7	19.1	6.0	2.8	3.8	5.0	M3	M2	5	5	0.127	0.9	36	
RAS3.5	RAC3.5	15.9	20.3	6.5	2.8	3.8	6.35	M4	M2.5	8	5	0.127	1.5	63	
RAS4	RAC4	19.1	22.9	6.5	2.8	4.8	8.0	M4	M2.5	15	5	0.127	2.5	50	
RAS5	RAC5	25.4	31.8	9.0	4.8	5.8	11.0	M5	M3	40	5	0.127	4.0	104	
RAS6	RAC6	31.8	44.5	12.0	5.8	7.8	14.0	M6	M4	86	5	0.127	6.0	200	

CARBON STEEL 6 beam	MODEL No.	MODEL No.	D	L	B	MIN R1	MIN R2	MAX BORE	SCREW SIZE	SCREW SIZE	MASS	ANGULAR OFFSET	PARALLEL OFFSET	PEAK TORQUE	TORSIONAL STIFFNESS
	(setscrew)	(clamp)	mm	mm	mm	mm	mm	mm	(setscrew)	(clamp)	grams	± degrees	± mm	Nm	Nm/rad
	NSS2		9.5	22.9	5.3	1.9	2.8	4.75	M2.5		8	3	0.12	1.0	5
NSS3	NSC3	12.7	25.4	6.5	2.8	4.4	6.35	M3	M2	18	5	0.17	3.0	25	
NSS3.5	NSC3.5	15.9	25.4	6.5	2.8	4.8	8.0	M4	M2.5	24	5	0.20	5.0	58	
NSS4	NSC4	19.1	28.0	6.5	4.4	5.8	10.0	M4	M2.5	46	7	0.25	9.0	165	
NSS5	NSC5	25.0	38.1	11.0	5.8	7.5	12.7	M5	M3	120	7	0.37	18.0	232	
NSS6	NSC6	31.8	57.2	16.0	5.8	9.8	16.0	M6	M4	280	7	0.50	28.0	440	

CARBON STEEL 3 beam	MODEL No.	MODEL No.	D	L	B	MIN R1	MIN R2	MAX BORE	SCREW SIZE	SCREW SIZE	MASS	ANGULAR OFFSET	PARALLEL OFFSET	PEAK TORQUE	TORSIONAL STIFFNESS
	(setscrew)	(clamp)	mm	mm	mm	mm	mm	mm	(setscrew)	(clamp)	grams	± degrees	± mm	Nm	Nm/rad
	RSS2		9.5	14.2	4.5	1.9	2.8	4.0	M2.5		5	3	0.1	0.4	5
RSS3	RSC3	12.7	19.1	6.0	2.8	3.8	5.0	M3	M2	13	5	0.127	1.0	78	
RSS3.5	RSC3.5	15.9	20.3	6.0	2.8	3.8	6.35	M4	M2.5	21	5	0.127	2.0	147	
RSS4	RSC4	19.1	22.9	6.5	2.8	4.8	8.0	M4	M2.5	40	5	0.127	3.0	118	
RSS5	RSC5	25.0	31.8	9.0	4.8	5.8	11.0	M5	M3	106	5	0.127	6.0	239	
RSS6	RSC6	31.8	44.5	12.0	5.8	7.8	14.0	M6	M4	230	5	0.127	11.0	357	

STAINLESS STEEL 6 beam	MODEL No.	MODEL No.	D	L	B	MIN R1	MIN R2	MAX BORE	SCREW SIZE	SCREW SIZE	MASS	ANGULAR OFFSET	PARALLEL OFFSET	PEAK TORQUE	TORSIONAL STIFFNESS
	(setscrew)	(clamp)	mm	mm	mm	mm	mm	mm	(setscrew)	(clamp)	grams	± degrees	± mm	Nm	Nm/rad
	NHS2		9.5	22.9	5.3	1.9	2.8	4.75	M2.5		8	3	0.12	1.0	4
NHS3	NHC3	12.7	25.4	6.5	2.8	4.4	6.35	M3	M2	18	5	0.17	3.0	20	
NHS3.5	NHC3.5	15.9	25.4	6.5	2.8	4.8	8.0	M4	M2.5	24	5	0.20	5.0	36	
NHS4	NHC4	19.1	28.0	6.5	4.4	5.8	10.0	M4	M2.5	46	7	0.25	8.0	112	
NHS5	NHC5	25.4	38.1	11.0	5.8	7.5	12.7	M5	M4	120	7	0.37	16.0	158	

STAINLESS STEEL 3 beam	MODEL No.	MODEL No.	D	L	B	MIN R1	MIN R2	MAX BORE	SCREW SIZE	SCREW SIZE	MASS	ANGULAR OFFSET	PARALLEL OFFSET	PEAK TORQUE	TORSIONAL STIFFNESS
	(setscrew)	(clamp)	mm	mm	mm	mm	mm	mm	(setscrew)	(clamp)	grams	± degrees	± mm	Nm	Nm/rad
	RHS2		9.5	14.2	4.5	1.9	2.8	4.0	M2.5		5	3	0.1	0.4	4
RHS3	RHC3	12.7	19.1	6.0	2.8	3.8	5.0	M3	M2	13	5	0.127	1.0	63	
RHS3.5	RHC3.5	15.9	20.3	6.0	2.8	3.8	6.35	M4	M2.5	21	5	0.127	1.8	100	
RHS4	RHC4	19.1	22.9	6.5	2.8	4.8	8.0	M4	M2.5	40	5	0.127	2.7	80	
RHS5	RHC5	25.4	31.8	9.0	4.8	5.8	11.0	M5	M4	106	5	0.127	6.0	163	

**DIMENSIONS**

**TORQUE SERVICE FACTOR**

Unidirectional steady load X1  
Unidirectional stop/start load X1.5  
Reversing load X2